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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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AVAGO TECHNOLOGIES, LTD. P.O. BOX 1920 DENVER, CO 80201-1920			EXAMINER LEWIS, MONICA	
			ART UNIT 2822	PAPER NUMBER

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/807,417

Applicant(s)

FAZZIO, R. SHANE

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,9-11 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,9-11 and 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the request for continued examination filed October 27, 2006.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/27/06 has been entered.

Response to Arguments

3. Applicant's arguments with respect to claims 1-4, 6, 9-11 and 20-23 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s): a) caulking agent surrounds at least a portion of the cap (See Claim 6). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

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must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 6 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art in view of Guenther et al. (U.S. Publication No. 2003/0062830).

In regards to claim 1, Applicant's Prior Art ("APA") discloses the following:

a) a device chip including a substrate (20) and at least one circuit element (24) fabricated on the substrate (For Example: See Figure 2);

b) a cap (30) over said device chip said cap including a gasket (32) having an inner and outer surface (For Example: See Figure 2);

c) bonding agent (34) bonding said cap to said device chip to define a hermitically sealed cavity (For Example: See Figure 2).

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In regards to claim 1, APA fails to disclose the following:

a) a caulking agent at least partially surrounding said bonding agent to reinforce the sealed cavity, said caulking agent surrounding said bonding agent at at least the inner surface of the gasket.

However, Guenther et al. ("Guenther") discloses a caulking agent (470) at least partially surrounding said bonding agent (420) said caulking agent surrounding said bonding agent (420) at at least the inner surface of the gasket (For Example: See Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent at least partially surrounding said bonding agent said caulking agent surrounding said bonding agent at at least the inner surface of the gasket as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

In regards to claim 2, APA discloses the following:

a) the bonding agent comprises gold (For Example: See Paragraph 4).

In regards to claim 3, APA fails to disclose the following:

a) the caulking agent is selected from a group consisting of amorphous fluorocarbon polymer, polyimide materials, and benzocyclobutene based materials.

However, Guenther discloses a caulking agent that is selected from a group consisting of amorphous fluorocarbon polymer, polyimide materials, and benzocyclobutene based materials (For Example: See Paragraph 19). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that is selected from a group consisting of amorphous fluorocarbon polymer, polyimide

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materials, and benzocyclobutene based materials as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

In regards to claim 6, APA fails to disclose the following:

- a) the caulking agent surrounds at least a portion of the cap.

However, Guenther discloses a caulking agent that surrounds at least a portion of the cap (For Example: See Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that surrounds at least a portion of the cap as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

In regards to claim 21, APA fails to disclose the following:

- a) a caulking agent extends from said cap to said device.

However, Guenther discloses a caulking agent that extends from said cap to said device (For Example: See Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that extends from said cap to said device as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

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In regards to claim 22, APA fails to disclose the following:

- a) the caulking agent is adjacent to said bonding agent.

However, Guenther discloses a caulking agent adjacent to said bonding agent (For Example: See Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that is adjacent as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

In regards to claim 23, APA fails to disclose the following:

- a) the caulking agent is separated from said bonding agent by open space.

However, Guenther discloses a caulking agent that is separated from said bonding agent by open space (For Example: See Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that is separated from said bonding agent by open space as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

Finally, the following limitation makes it a product by process claim: a) "prior to bonding said cap to said device chip." The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based

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upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "*product by process*" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "*product by, all of*" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "*product by process*" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art in view of Guenther et al. (U.S. Publication No. 2003/0062830) and Kikushima et al. (U.S. Publication No. 2003/0061693).

In regards to claim 4, APA fails to disclose the following:

a) the circuit element is a resonator.

However, Kikushima et al. ("Kikushima") discloses a semiconductor device that has a resonator (3) (For Example: See Figure 1b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a resonator as disclosed in Kikushima because it aids in providing a communication device (For Example: See Paragraph 4).

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Additionally, since APA and Kikushima are both from the same field of endeavor, the purpose disclosed by Kikushima would have been recognized in the pertinent art of APA.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art in view of Guenther et al. (U.S. Publication No. 2003/0062830) and Goldmann et al. (U.S. Patent No. 6,459,160).

In regards to claim 9, APA fails to disclose the following:

a) comprises multiple layers of the caulking agent.

However, Goldmann et al. ("Goldmann") discloses a semiconductor device that comprises multiple layers of the caulking agent (142, 152 and 54) (For Example: See Figure 1b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include multiple layers of the caulking agent as disclosed in Goldmann because it aids in providing protection for the device (For Example: See Column 7 Lines 30-34).

Additionally, since APA and Goldmann are both from the same field of endeavor, the purpose disclosed by Goldmann would have been recognized in the pertinent art of APA.

In regards to claim 10, APA fails to disclose the following:

a) multiple layers of the caulking agent comprises layers having different caulking material relative to other layers of the caulking agent.

However, Goldmann discloses multiple layers of the caulking agent comprises layers having different caulking material relative to other layers of the caulking agent (For Example: See Figure 1b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include multiple layers of the caulking agent comprises layers having different caulking material relative to other layers of the

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caulking agent as disclosed in Goldmann because it aids in providing protection for the device (For Example: See Column 7 Lines 30-34).

Additionally, since APA and Goldmann are both from the same field of endeavor, the purpose disclosed by Goldmann would have been recognized in the pertinent art of APA.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art in view of Guenther et al. (U.S. Publication No. 2003/0062830), McCormick et al. (U.S. Publication No. 2003/0143423) and McHerron et al. (U.S. Patent No. 6,046,074).

In regards to claim 11, APA fails to disclose the following:

a) multiple layers of the caulking agent comprises layers have the same caulking material relative to other layers of the caulking agent.

However, McHerron et al. ("McHerron") discloses a caulking agent that comprises layers that have the same caulking material relative to other layers of the caulking agent (For Example: See Figure 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that comprises layers having the same caulking material relative to other layers of the caulking agent as disclosed in McHerron because it aids in providing good strength (For Example: See Column 4 Lines 40-50).

Additionally, since APA and McHerron are both from the same field of endeavor, the purpose disclosed by McHerron would have been recognized in the pertinent art of APA.

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10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art in view of Guenther et al. (U.S. Publication No. 2003/0062830) and Guenther et al. (U.S. Publication No. 2004/0211966).

In regards to claim 20, APA fails to disclose the following:

a) the caulking agent surrounds said bonding agent at both the inner and outer surface.

However, Guenther discloses a caulking agent that surrounds said bonding agent at the inner surface (For Example: See Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that surrounds said bonding agent at the inner surface as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

Finally, Guenther et al. ("Guenther") discloses a caulking agent (380) that surrounds said bonding agent (364) at the outer surface (For Example: See Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of APA to include a caulking agent that surrounds said bonding agent at the outer surface as disclosed in Guenther because it aids in providing protection (For Example: See Paragraph 23).

Additionally, since APA and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of APA.

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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

ML

November 25, 2006

A handwritten signature in black ink, appearing to be 'C. Smith', is located in the lower right quadrant of the page.